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A Pilot Study Examining Depressive Symptoms, Internet Use, and Sexual Risk Behavior among Asian Men Who Have Sex With Men

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Abstract

In the present paper, we present a preliminary examination of the association of depression level, internet use, meeting sexual partners online, and unprotected sexual activity among Asian men who have sex with men (MSM). Because depression level has been previously linked to increased levels of sexual risk behavior, and heightened levels of Internet use has been linked to greater depressive symptoms, the present pilot research jointly examines these factors. We found that those with higher levels of depression, measured using the CES-D, spent more time online, met significantly more sexual partners online, and reported a significantly higher number of unprotected sexual acts. Based on this initial evidence, we conclude that incorporating CES-D to screen for depression can serve as an important tool for addressing underlying dynamics of sexual risk behaviors.

Introduction

Depression is associated with a wide range of sexual risk behaviors (1), including HIV-risk behavior (1) along with factors that have been linked to increased levels of HIV-risk including alcohol and drug abuse (2). Given its importance in the context of overall levels of health and wellness as well as in the mitigation of HIV-risk, we examine the impact of differential levels of depressive symptoms on the amount of time spent online, the extent to which this materializes as indicated by the number of sexual partners met online, and number of unprotected sexual acts among Asian men who have sex with men (MSM), which is an under-studied population.

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Lemieux and Wong conceptualized the study; Lemieux & Lin conducted the analyses; Nehl consulted on the analyses; Lin and Tran contributed to the literature review. All contributed to the writing, editing, and interpretations of the findings.

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In the context of reducing sexual risk behaviors, and enhancing HIV-prevention efforts, we position the current research as a preliminary examination of areas in which there may be potential benefit for early detection and treatment of depression among an Asian MSM population. While it has been posited that treatment of depression may prevent other health morbidity, it is important to note that much of the knowledge in this domain has been established in samples that are quite distinct from the current focus, including prevention efforts among African American adolescents (3), and HIV-positive men (4).

In general, the developing literature on Internet use and psychological well-being suggests that Internet use has a small, but potentially detrimental effect on psychological well-being, including increased levels of depression and loneliness, along with lower levels of self-esteem and life satisfaction. A recent meta-analysis showed an association between higher levels of Internet use and reduced psychological well-being (5). Additionally, researchers have found a close relationship between Internet addiction and depression, such that individuals with Internet addiction were significantly more depressed (6). Among adolescents, the relationship between internet use and depressive symptoms is not strongly related, with the notable exceptions of the amount of time spent online which is higher among those with more depressive symptoms, and heightened levels of disclosure among males (7).

Online sex-seeking behaviors can potentially materialize into direct physical encounters, with online searches for sexual partners leading to a fairly wide range of meeting places for sexual encounters. Some searches are explicitly devoted to finding partners willing to engage in unprotected sex (8). Taken together the extant research in this domain suggests that more time spent online, including engaging in sex-seeking behaviors, has the potential to result in greater numbers of sexual partners and unprotected sex acts among MSM.

In general, little is known about differential levels of depression and its association with sexual risk behavior among Asian MSM populations. In the current research we are interested in examining the impact of differential levels of depression on sexual risk behaviors as related to discrete diagnostic categories rather than linear relationships. More importantly, the extant studies in the literature do not address these issues with Asian MSM populations. Thus, the present research presents an initial inquiry into these relationships.

Data Source and Sample Characteristics

The current cross-sectional research had a total sample size of 319 self-identified Asian MSM. Data collection took place between December 2004 and July 2007, in Washington, DC and Philadelphia, PA (DC-PA Men of Asia Prevention Study). Participants were initially recruited through a venue-based recruitment method using a community based participatory partnership with local community Aids Service Organizations who joined, advised, and participated in the research design and process. The community-based organization (CBO) partners started out as ASOs but have expanded their services to include a variety of programs such as language assistance, transgender programs, etc. Broad-based recruitment strategies were used including (1) standard outreach such as distributing study flyers and postcards in gay bars, venues and public sex areas; (2) announcements via mainstream (e.g., gay pride) and ethnic-specific gay events; and (3) announcements via Internet.

Eligible participants (i.e., self-identified as Asian/Pacific ethnicity; men who have sex with men; aged 18+; had sex with another man in the last 12 months; had resided in the targeted city in the last 6 months; able to provide verbal and written informed consents in English, Chinese, or Vietnamese; willingness to participate in HIV screening and confirmatory testing) were recruited at these venues by the CBOs. After the initial recruitment,

appointments were scheduled and participants completed a CASI survey in the offices of the community partners. In short, participants in this study constitute a purposive convenience sample. All data collection and research protocols were approved by the Institutional Review Board of Georgetown University.

For the current paper, we include the 20-item Center for Epidemiologic Studies Depression Scale (9), a widely used and validated scale of depressive symptoms. This measure has been used across a diverse range of populations. The CES-D scale can be used to categorize level of depressive symptoms across 3 discrete levels (no depression; mild depression; severe depression). CES-D scores range from 0 to 60, with higher scores indicating more symptoms of depression. CES-D scores of 15 or less indicative of no depression, scores of 16 to 26 are considered indicative of mild depression and scores of 27 or more indicative of major depression (10).

In addition, we analyzed online sex-seeking behaviors (online sex) and sexual behaviors in last 30 days (actual sex). Sex was defined as any physical or mental activities, in person or via phone or Internet, that are purposefully for sexual pleasure. Online sex-seeking behaviors included number of hours spent online for personal reasons, and self-reported number of sex partners who were met online over the last 30 days. Sexual behaviors were the occurrence of sexual acts in the last 30 days. We also examined a range of demographic factors to assess the extent to which they were related to differential levels of depressive symptoms.

Key Findings and Implications

In our initial analysis, we examined correlations, item means (using one-way ANOVA, with depression level as the between-subjects factor), and frequencies (using Chi-square analyses), to assess the strength of association among variables of interest with an explicit focus on factors that differ significantly on the basis of depression level. Table 1 reports demographic and behavioral characteristics for the total sample, as well as by depression level. For subsequent analyses examining the relationship of depression level on the outcome measures of interest, we dummy-coded each category of depression as a factor, which were then included as independent variables in subsequent OLS regression analyses.

Time (total number of hours) spent online

Differential levels of depression were significantly related to the amount of time spent online ($R^2 = .03$; $F(2, 311) = 4.83$, $p = .009$) such that those who were classified as having major depressive symptoms reported significantly more time spent online ($M = 30$ hours; $\beta = 0.28$, $p < .05$) than those who were not classified as depressed.

Number of sexual partners met online

Differential levels of depression were also significantly associated with the number of partners met online ($R^2 = .03$; $F(2, 306) = 4.93$, $p = .008$) such that those who were classified as having major depressive symptoms reported significantly more sexual partners ($M = 12$; $\beta = 0.15$, $p = .009$) than those who were not classified as depressed.

Occurrence of unsafe sexual behaviors

Last, differential levels of depression were significantly associated with the number of occurrences of unprotected sexual acts ($R^2 = .10$; $F(2, 60) = 3.39$, $p = .04$) such that those who were classified as having major depressive symptoms reported significantly more unprotected sexual acts ($N = 5$, which represents 63% of those responding to this item who were classified as having severe depressive symptoms; $\beta = 0.28$, $p = .03$). It is important to

note that the total number of participants responding to this item was 62, which is just below 20% of the total sample. Thus, this finding should be cautiously interpreted.

The current research examines the association of differential levels of depressive symptoms on Internet use, online sex-seeking behaviors, and the relationship that depressive symptoms have with HIV-risk behavior among an Asian MSM population. Because of the relatively small sample size which was drawn from CBOs that serve Asian MSM, the conclusions that we can draw from this pilot study are inherently limited to Asian MSM that fit the same demographic and behavioral profile. However, these preliminary analyses have provided initial evidence supporting the relationship between elevated depression level and subsequent sexual risk behaviors. Thus, the present study supports additional research addressing the particular array of risk factors and broader issues of depressive symptoms and psychological well-being that appear to have a relationship with the advent of elevated levels of sexual and HIV-risk behaviors. Further, given that CES-D is a widely used and validated screening instrument, it can be readily incorporated into initial assessment efforts to assess factors that are associated with elevated potential for risky sexual behaviors. Finally, as is the case with other studies in the broader domain of depression and how it relates to risk, we find that there is a preliminary level of support to suggest that interventions that address issues related to depression have the potential to reduce risk behaviors, including those that originate in an online environment.

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Table 1

Socio-demographic Characteristics by Depression Categories

	Overall (N=319)		No Depression (N=123)		Mild Depression (N=159)		Major Depression (N=37)		Significance
	M (SD)		M (SD)		M (SD)		M (SD)		
Age	31.3 (7.8)		31.9 (7.5)		31.3 (7.9)		29.8 (8.2)		F=1.01, p=0.37
Age when came to U.S.*	16.0 (9.4)		17.1 (8.8)		16.2 (10.0)		11.5 (7.4)		F=3.97, p=0.02
Age when left country of origin	16.5 (11.9)		18.5 (11.1)		15.7 (11.6)		13.2 (14.5)		F=2.78, p=0.06
Age when first felt attracted to men*	11.3 (5.8)		11.7 (5.7)		10.5 (4.6)		13.8 (9.2)		F=3.80, p=0.02
Age when first physical contact with another man	18.3 (7.2)		18.4 (7.7)		18.2 (7.3)		18.6 (3.9)		F=0.03, p=0.97
	n (%)		n (%)		n (%)		n (%)		
Sexual Orientation									
Straight	75 (24.7)		24 (20.7)		38 (25.0)		13 (36.1)		x2(4)=5.56, p=0.23
Gay	199 (65.5)		79 (68.1)		102 (67.1)		18 (50.0)		
Bisexual or other	30 (9.9)		13 (11.2)		12 (7.9)		5 (13.9)		
Marital Status									
Never married	245 (78.3)		90 (74.4)		130 (83.3)		25 (69.4)		x2(4)=8.03, p=0.09
Married/living with partner	51 (16.3)		26 (21.5)		18 (11.5)		7 (19.4)		
Separated/divorced	17 (5.4)		5 (4.1)		8 (5.1)		4 (11.1)		
Education									
College degree or less	126 (54.5)		49 (53.3)		62 (53.9)		15 (62.5)		x2(2)=0.69, p=0.71
Higher than college degree	105 (45.5)		43 (46.7)		53 (46.1)		9 (37.5)		
Place of Birth									
U.S.	87 (27.4)		30 (24.4)		48 (30.2)		9 (25.0)		x2(2)=1.29, p=0.53
Outside U.S.	231 (72.6)		93 (75.6)		111 (69.8)		27 (75.0)		
Ethnic Background									
Chinese	129 (44.6)		56 (50.5)		61 (42.1)		12 (36.4)		x2(6)=9.79, p=0.13
Filipino	88 (30.4)		36 (32.4)		40 (27.6)		12 (36.4)		
Vietnamese	48 (16.6)		15 (13.5)		26 (17.9)		7 (21.2)		
Other Asians	24 (8.3)		4 (3.6)		18 (12.4)		2 (6.1)		
Country of Origin									
China	38 (18.4)		20 (24.4)		17 (16.8)		1 (4.2)		x2(6)=12.28, p=0.06

	Overall (N=319)	No Depression (N=123)	Mild Depression (N=159)	Major Depression (N=37)	Significance
	M (SD)	M (SD)	M (SD)	M (SD)	
Philippines	57 (27.5)	26 (31.7)	22 (21.8)	9 (37.5)	
Vietnam	53 (25.6)	18 (22.0)	26 (25.7)	9 (37.5)	
Other Asian countries	59 (28.5)	18 (22.0)	36 (35.6)	5 (20.8)	
Employment Status*					
Yes	282 (90.4)	109 (90.8)	144 (92.9)	29 (78.4)	x2(2)=7.30, p=0.03
No	30 (90.6)	11 (9.2)	11 (7.1)	8 (21.6)	
Annual Income					
Less than 30,000	120 (42.4)	40 (35.4)	67 (46.9)	13 (48.1)	x2(4)=6.87, p=0.14
30,000 to 59,999	90 (31.8)	39 (34.5)	40 (28.0)	11 (40.7)	
60,000 or more	73 (25.8)	34 (30.1)	36 (25.2)	3 (11.1)	
Online sex-seeking behavior					
Total hours/week use internet for personal reasons**	24.6 (14.0)	22.3 (13.5)	25.2 (14.1)	30.3 (14.2)	F=4.83 (p=0.01)
Hours/week on average on internet: dating/browsing	12.3 (16.6)	10.6 (15.8)	12.7 (16.8)	16.4 (18.2)	F=1.75 (p=0.18)
Hours/week on average on internet: chatroom to hook up	8.7 (15.4)	6.5 (13.7)	9.4 (16.0)	12.9 (17.6)	F=2.75 (p=0.066)
Hours/week on average on internet: interactive cybersex	5.2 (13.1)	4.6 (12.5)	4.9 (12.7)	8.7 (16.0)	F=1.45 (p=0.24)
Hours/week on average on internet: pom	5.0 (10.4)	4.9 (10.4)	5.0 (10.2)	5.6 (11.1)	F=0.06 (p=0.94)
In last 30 days, hours online for sex	10.6 (16.1)	9.5 (15.6)	10.5 (16.0)	15.3 (18.1)	F=1.82 (p=0.16)
In last 30 days, number of people had sex with in person whom met online**	5.3 (13.9)	3.6(11.4)	5.1 (13.7)	11.8 (20.0)	F=4.93 (p=0.01)
In last 30 days, I regularly have sex with others in person					
Yes	16 (22.9)	4 (16.0)	9 (23.7)	3 (42.9)	x2(2)=2.27, p=0.32
No	54 (77.1)	21 (84.0)	29 (76.3)	4 (57.1)	
In last 30 days, I had sex with other people via phone/online (e.g. phone sex)**					
Yes	27 (35.1)	3 (11.1)	20 (48.8)	4 (44.4)	x2 (2)=10.54, p=0.01
No	50 (64.9)	24 (88.9)	21 (51.2)	5 (55.6)	
In last 30 days, I practiced unsafe sex with others*					
Yes	17 (27.0)	3 (15.8)	9 (25.0)	5 (62.5)	x2 (2)=6.40, p=0.04
No	46 (73.0)	16 (84.2)	27 (75.0)	3 (37.5)	

Note: N varies based on missing responses;

10.0>P
;5.0>P
P
*

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